

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A response characteristic estimation apparatus, including:  
an input unit which inputs a burst signal including a training signal as a received signal;  
a correlation processor which performs, in a training signal interval, a correlation processing between the received signal which has been inputted and the training a-known transmission signal;  
a phase error estimator which estimates a phase error of the received signal, which has been inputted, in the training signal interval during a period of time in which the correlation processor is performing its process, and in parallel with the processing in the correlation processor; and  
a phase error compensator which estimates, at the end of the training signal interval when the processing in the correlation processor ends, response characteristic of the received signal, which has been inputted, to the training known-transmission signal by compensating for a result of the correlation processing based on the estimated phase error.

2. (Currently Amended) The response characteristic estimation apparatus according to Claim 1, wherein the training known-transmission signal is included in a prescribed interval in the burst received signal in a sequential manner, and wherein the apparatus further includes a controller which detects an end of the sequential interval of the training known-transmission signal from the received signal which has been inputted, and the phase error compensator

compensates the result of the correlation processing based on the estimated phase error at the detected end.

3. (Currently Amended) A response characteristic estimation method, including:

inputting a burst signal including a training signal as a received signal;

performing, in a training signal interval, a correlation processing between the received signal which has been inputted and the training ~~a known transmission~~ signal;

estimating a phase error of the received signal, which has been inputted, in the training signal interval ~~during a period of time in which the correlation processing is being performed~~, and in parallel with the correlation processing; and

estimating, at the end of the training signal interval ~~when the correlation processing ends~~, response characteristic of the received signal, which has been inputted, to the training ~~known transmission~~ signal by compensating for a result of the correlation processing based on the estimated phase error.

4. (Currently Amended) The response characteristic estimation method according to claim 3, wherein the training ~~known transmission~~ signal is included in a prescribed interval in the burst ~~received~~ signal in a sequential manner, and wherein the method further includes detecting an end of the sequential interval of the training ~~known transmission~~ signal from the received signal which has been inputted, and in estimating the response characteristic of the received signal, which has been inputted, to the training ~~known transmission~~ signal, the result of the correlation processing is compensated based on the estimated phase error at the detected end.

5. (Currently Amended) ~~A computer readable medium encoded with a computer program product for performing the steps~~ A product comprising a recording medium having a computer program for causing a processing unit to perform steps of:

inputting a burst signal including a training signal as a received signal;

performing, in a training signal interval, a correlation processing between the received signal which has been inputted and the training ~~a known transmission~~ signal;

estimating a phase error of the received signal, which has been inputted, in the training signal interval ~~during a period of time in which the correlation processing is being performed~~, and in parallel with the correlation processing; and

estimating, at the end of the training signal interval ~~when the correlation processing ends~~, response characteristic of the received signal, which has been inputted, to the training ~~known transmission~~ signal by compensating for a result of the correlation processing based on the estimated phase error.

6. (Currently Amended) ~~The computer readable medium encoded with a computer program product~~ The product comprising a recording medium having a computer program according to claim 5, wherein the training ~~known transmission~~ signal is included in a prescribed interval in the burst ~~received~~ signal in a sequential manner, and wherein the program stored in the recording medium further includes detecting an end of the sequential interval of the training ~~known transmission~~ signal from the received signal which has been inputted, and in estimating the response characteristic of the received signal, which has been inputted, to the training ~~known transmission~~ signal, the result of the correlation processing is compensated based on the estimated phase error at the detected end.

7. (Currently Amended) A receiver, including:

an input unit which inputs burst signals including training signals as a plurality of received signals respectively;

a correlation processor which performs, in a training signal interval, correlation processings respectively between each of the plurality of received signals which have been inputted and a training ~~known-transmission~~ signal;

a phase error estimator which estimates a phase error of at least one of the plurality of received signals, which have been inputted, in the training signal interval ~~during a period of time in which the correlation processor is performing its process~~, and in parallel with the processing in the correlation processor;

a phase error compensator which generates, at the end of the training signal interval ~~when the processing in the correlation processor ends~~, a plurality of weighting coefficients by compensating for respectively a plurality of results of the correlation processings based on the estimated phase error; and

a synthesizing unit which performs multiplications in a manner that the plurality of received signals which have been inputted respectively correspond to the plurality of weighting coefficients and synthesizes results of the multiplications.

8. (Currently Amended) The receiver according to claim 7, wherein the phase error estimator estimates a conclusive phase error again by respectively estimating the phase error of each of the plurality of received signals, which have been inputted, to the training ~~known-transmission~~ signal based on the plurality of received signals, which have been inputted via a plurality of antennas, and the training ~~known-transmission~~ signal and by averaging the estimated plurality of phase errors.

9. (Currently Amended) The receiver according to claim 7, wherein the training ~~known transmission~~ signal is included in a prescribed interval of the burst ~~received~~ signal in a sequential manner, and wherein the receiver further includes a controller which detects an end of the sequential interval of the training ~~known transmission~~ signal from the plurality of received signals which have been inputted, and the phase error compensator respectively compensates the plurality of results of the correlation proceedings based on the estimated phase errors at the detected end.

10. (Currently Amended) A receiving method, including:

inputting burst signals including training signals as a plurality of received signals respectively;

performing, in a training signal interval, correlation processings respectively between each of the plurality of received signals which have been inputted and the training ~~a known transmission~~ signal;

estimating a phase error of at least one of the plurality of received signals, which have been inputted, in the training signal interval ~~during a period of time in which the correlation processing is being performed~~, and in parallel with the correlation processing;

generating, at the end of the training signal interval ~~when the correlation processing ends~~, a plurality of weighting coefficients by compensating for respectively a plurality of results of the correlation processings based on the estimated phase error; and

synthesizing results of multiplications, wherein the multiplications are performed in a manner that the plurality of received signals which have been inputted respectively correspond to the plurality of weighting coefficients.

11. (Currently Amended) The receiving method according to claim 10, wherein, in estimating the phase error of at least one of the plurality of received signals, which have been inputted, ~~to the known transmission signal~~, a conclusive phase error is estimated again by respectively estimating the phase error of each of the plurality of received signals, which have been inputted, to the training ~~known transmission~~ signal based on the plurality of received signals which have been inputted via a plurality of antennas and the training ~~known transmission~~ signal and by averaging the estimated plurality of phase errors.

12. (Currently Amended) The receiving method according to claim 10, wherein the training ~~known transmission~~ signal is included in a prescribed interval of the burst ~~received~~ signal in a sequential manner, and wherein the method further includes detecting an end of the sequential interval of the training ~~known transmission~~ signal from the plurality of received signals which have been inputted and in generating the plurality of weighting coefficients, the plurality of results of the correlation processings are respectively compensated based on the estimated phase errors at the detected end.

13. (Currently Amended) ~~A computer readable medium encoded with a computer program product for performing the steps~~ A product comprising a recording medium having a computer program for causing a processing unit to perform steps of:

inputting burst signals including training signals as a plurality of received signals respectively;

performing, in a training signal interval, correlation processings respectively between each of the plurality of received signals which have been inputted and the training ~~a known transmission~~ signal;

estimating a phase error of at least one of the plurality of received signals, which have been inputted, in the training signal interval ~~during a period of time in which the correlation processing is being performed~~, and in parallel with the correlation processing;

generating, at the end of the training signal interval ~~when the correlation processing ends~~, a plurality of weighting coefficients by compensating for respectively a plurality of results of the correlation processings based on the estimated phase error; and

synthesizing results of multiplications, wherein the multiplications are performed in a manner that the plurality of received signals which have been inputted respectively correspond to the plurality of weighting coefficients.

14. (Currently Amended) ~~The computer readable medium encoded with a computer program product~~ The product comprising a recording medium having a computer program according to claim 13, wherein, in estimating the phase error of at least one of the plurality of received signals, which have been inputted, ~~to the known transmission signal~~, a conclusive phase error is estimated again by respectively estimating the phase error of each of the plurality of received signals, which have been inputted, to the training ~~known transmission~~ signal based on the plurality of received signals which have been inputted via a plurality of antennas and the training ~~known transmission~~ signal and by averaging the estimated plurality of phase errors.

15. (Currently Amended) ~~The computer readable medium encoded with a computer program product~~ The product comprising a recording medium having a computer program according to claim 13, wherein the training ~~known transmission~~ signal is included in a prescribed interval of the burst ~~received~~ signal in a sequential manner, and wherein the program stored in the recording medium further includes detecting an end of the sequential interval of the training

~~known transmission~~ signal from the plurality of received signals which have been inputted and, in generating the plurality of weighting coefficients, the plurality of results of the correlation processings are respectively compensated based on the estimated phase errors at the detected end